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### (54) Active noise attenuation system

(57) A noise attenuation system for the air induction ducting particularly for an internal combustion engine has an outwardly facing loudspeaker mounted within an air inlet duct so as to lie in the plane of the air intake opening. Signals from an error microphone (and also optionally a detector microphone) are processed in a signal controller, the output driver used to drive the loud-

speaker so that a cancellation sound field is produced, which attenuates the noise emanating from the air intake. The speaker is mounted on a fairing body creating an annular flow passage, a filter element ring inserted in the annular space.

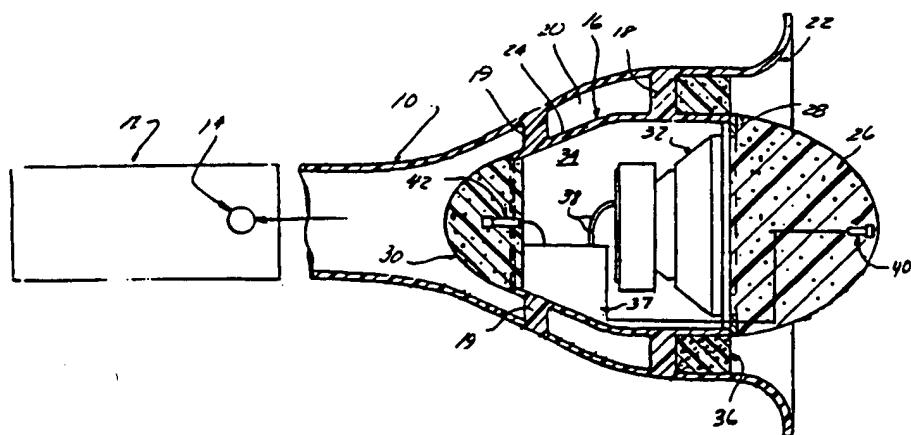


FIG-1

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## EUROPEAN SEARCH REPORT

Application Number

EP 98 11 0102

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
D, X	WO 97 20307 A (SIEMENS ELECTRIC LTD) 5 June 1997 * page 2 *	1-3, 10, 11, 14	F02M35/12
A	* page 3, line 16 - page 6, line 3; claims 1,2; figures 1,2 *	4	
A	FR 2 740 599 A (TECHNOFIRST) 30 April 1997 * page 1, line 3 - page 2, line 12 * * page 8, line 36 - page 9, line 29 * * page 18, line 38 - page 20, line 22; figures 1,6 *	1-3, 5, 8, 10, 11, 13	
A	GB 2 203 488 A (FORD MOTOR CO) 19 October 1988 * abstract; figures 1,2 *	9	
A	US 3 936 606 A (Wanke RONALD L) 3 February 1976 * column 2, line 59 - column 4, line 4; figure 1 *	1, 3, 7, 10, 11, 14	
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The present search report has been drawn up for all claims			
Place of search  THE HAGUE	Date of completion of the search  4 June 1999	Examiner  Marsano, F	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-06-1999

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